

REMARKS

Claims 18-37 are pending in the application. By the foregoing amendment, Applicants seek to amend claims 33-37 to correct the claim numbering in order to overcome the Examiner's objection to claim 33. Applicants request that the Examiner enter this amendment and withdraw this objection.

The Examiner rejected claims 18-37 under 35 USC 102 as being anticipated by U.S. Patent No. 6,233,540 to Schaumont et al. (hereafter referred to as "Schaumont"). Based on the following Remarks, Applicants respectfully request that the Examiner reconsider the rejection, and withdraw it.

Independent claims 18, 26 and 33 recite:

18. A method for compiling a functional description expressed in an interpretive, algorithmic language into target code for selected hardware, the method comprising the steps of:

receiving the functional description expressed in the interpretive, algorithmic language with at least one undeclared variable;

assigning a type and a dimension to the at least one undeclared variable by analyzing the functional description to form an abstract syntax tree;

transforming compound statements in the abstract syntax tree into a series of single statements; and

translating the abstract syntax tree into a register transfer level format.

26. A system for compiling a functional description expressed in an interpretive, algorithmic language into target code for selected hardware comprising:

a parser for receiving the functional description expressed in the interpretive, algorithmic language with at least one undeclared variable;

a type-shape analyzer, coupled to the parser, for assigning a type and a dimension to the at least one undeclared variable by analyzing the functional description to form an abstract syntax tree;

a statement deconstructor, coupled to the type-shape analyzer, for transforming a compound statement in the abstract syntax tree into at least one simple statement; and

a translator, coupled to the statement deconstructor, for translating the abstract syntax tree into a register transfer level format.

33. One or more computer readable storage devices having computer readable code embodied on said computer readable storage device, said computer readable code for programming one or more computers to perform a method for compiling a functional description expressed in an interpretive, algorithmic language into target code for selected hardware, the method comprising the steps of:

receiving the functional description expressed in the interpretive, algorithmic language with at least one undeclared variable;

assigning a type and dimension to the at least one undeclared variable by analyzing the functional description to form an abstract syntax tree;

transforming compound statements in the abstract syntax tree into a series of single statements; and

translating the abstract syntax tree into a register transfer level format.

In a rejection under 35 U.S.C. §102, each and every claim element must be present in the applied reference. However, the Examiner has failed to point out any prior art teaching which anticipates the explicit recitation in the language of independent claims 18 and 33 of “assigning a type and a dimension to the at least one undeclared variable by analyzing the functional description to form an abstract syntax tree.” Nor does the Examiner distinctly point out any prior art teaching that anticipates the claimed element of independent claim 26 of “a type-shape analyzer, coupled to the parser, for assigning a type and a dimension to the at least one undeclared variable by analyzing the functional description to form an abstract syntax tree.” Therefore, it is respectfully submitted that the rejection is improper and should be withdrawn.

In paragraph 5 of the office action the Examiner states that “a type-shape analyzer (C++ Timed, Bittrue System Description in Figs. 22 and 23), coupled to the parser, for assigning a type and a dimension to the at least one undeclared variable by analyzing the functional description to form an abstract syntax tree.” Applicants respectfully disagree.

Applicants have reviewed Schaumont, in particular the description corresponding to Figures 22 and 23 (as cited by the Examiner). Applicants submit that Schaumont does not teach or disclose “assigning a type and a dimension to an undeclared variable by analyzing the functional description to form an abstract syntax tree” as recited in the independent claims. In particular, the description of Figures 22 and 23 begins at column 24, line 24 and continues to column 25, line 28. Nowhere in this description or elsewhere in the reference does Schaumont describe “assigning a type and a dimension to the at least one undeclared variable by analyzing the functional description to form an abstract syntax tree” as recited in independent claims 18, 26 and 33. Schaumont states that when using an “interpretive approach the C++ description is preprocessed by the design system and stored as a data structure in memory.” Column 24, lines 15-17. However this is not equivalent to the claimed element, as described above. This simply describes how C++ can be manipulated to allegedly act in an interpretive approach (Applicants reserve the right to further distinguish this assertion of Schaumont if necessary).

Since the cited reference does not teach or suggest every element of any independent claims or any claims dependent thereon claims, Applicants respectfully request that the Examiner reconsider and withdraw the rejection under 35 USC §102 and allow all pending claims.

Conclusion

In sum, Applicants respectfully submit that claims 18-37 as presented herein, are patentably distinguishable over the cited references (including references cited, but not applied). Therefore, Applicants request consideration and allowance of these claims.

Applicants respectfully invite Examiner to contact Applicants' representative at the number provided below if Examiner believes it will help expedite furtherance of this application.

RESPECTFULLY SUBMITTED,
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